IOWA HIGHWAY RESEARCH BOARD
Minutes of October 26, 2001

Regular Board Members Present

J. Adam
J. George
L. Greimann
D. Julius
B. Keierleber
K. Mahoney
M. Nahra
W. Weiss
J. Witt

Alternate Board Members Present

J. Byg for R. Krauel
R. Gould for S. Larson
G. Miller for J. Selmer
W. Nixon for J. Odgaard
S. Andrle
L. Brehm
J. Weber

Board Members With No Representation

T. Myers
D. Osipowicz

Secretary

M. Dunn

Visitors

Wally Mook	*City of Bettendorf*
Bob Given	*Iowa Concrete Paving Association*
Saleem Baig	*Iowa Department of Transportation*
Sara Buseman	*Iowa Department of Transportation*
Elijah Gansen	*Iowa Department of Transportation*
Ian MacGillivray	*Iowa Department of Transportation*
Bob Steffes	*Iowa Department of Transportation*
Jim Cable	*Iowa State University*
Bob Guinn	*Iowa State University*
Max Porter	*Iowa State University*
Omar Smadi	*Iowa State University/CTRE*
Duane Smith	*Iowa State University/CTRE*
Hosin "David" Lee	*The University of Iowa*
Soonjae Yu	*The University of Iowa*

The meeting was held in the Scheman Building at Iowa State University, Ames, Iowa. The meeting was called to order at 9:15 A.M. by John Adam.

Agenda Review/Modification

- Agenda item 6, the final report for TR-408, "Investigation of Glass Fiber Composite Dowel Bars For Highway Pavement Slabs" by Max Porter of Iowa State University, will be moved later in the meeting due to a class obligation.

Approval of the Minutes

- Wade Weiss moved to accept the minutes from the September 28, 2001 meeting with no additions or corrections. Doug Julius seconded. Carried with 12 yes, 0 no, and 0 abstaining.

Annual Report

- Mark Dunn mentioned that all the board members and alternates received an annual report for their information. There were no questions or discussion on the report.

Problem Statement, "Technology Transfer Program for the Iowa Highway Research Board (IHRB)"

- Mark Dunn presented information on general technology trends, objectives, tasks, costs ($10,000/year) and time frame associated with the proposed project. With the nature of this project, a report listing expenditures and accomplishments will be presented to the IHRB annually along with a proposal to renew funding for the next year.

- Wade Weiss moved that it be considered as a proposal at this time (not a problem statement) and moved to approve the project. Mark Nahra seconded. Carried with 12 yes, 0 no, and 0 abstaining. (Funding: 40% Primary, 50% Secondary, 10% Street)

Proposal for continuation of HR-296, "Local Technical Assistance Program (LTAP)"

- Duane Smith, Iowa State University/CTRE, Steve Andrle, Iowa State University/CTRE, and Wally Mook, City of Bettendorf, presented information covering the changes at LTAP including, the advisory board, the Iowa Roads Scholar Program, the quarterly report. They also reviewed LTAP's link to research, 2002 training opportunities, and budget overview, history and request

- Transportation workers (light or heavy equipment operators) at city and county levels are the main group of people in the Iowa Road Scholar Program. However, individuals at a professional level, such as county engineers have attended workshops such as the MUTCD training for example.

- The budget of the workshops was reviewed. The typical cost (for the training recipient) of a workshop is $65-$75 for 1 day or approximately $135 for 2 days. The $10 number referred to in the report is above and beyond the costs. The money in and out is not shown in the budget. Those who attend the workshops pay the direct costs, like meals and room, what they don't pay for is the development costs. Also noted was that the workshops are offered in different locations around the state.

- The Tech News is the largest cost of the LTAP budget and is one of the things that receives the most positive feedback. It was discussed having this sent out electronically (it is currently on the web site). At this time, most recipients desire to receive a paper copy versus receiving it electronically. This is something that can be explored in the future. The major expense of the newsletter is developing the articles and the level of quality that goes into the information.

- FHWA and LTAP funds are blended together to support the Safety Circuit Rider.

- Jim George moved to approve the proposal. Glen Miller seconded. Carried with 13 yes, 0 no, and 0 abstaining. (Funding: 10% Primary, 45% Secondary, 45% Street)

Review of Revised Solicitation for Transportation Information System for Road System Managers

- Mark Dunn reviewed the major changes to the RFP based on the comments of the board from the last meeting. It is now requesting a broad based approach and asks that benefits to each jurisdiction be explained.

- It was decided that the time frame should be reduced to 1 year.

- This will be sent to only to the three principle investigators that submitted proposals to the initial RFP.

Review of first round of Request for Proposals (RFPs) for FY 01-02

- ***Investigation of the Effects of Anti-icing Brine on the Deterioration of Highway Infrastructure***
  - After discussion, the board decided to shape the RFP to be restricted to salt brine and include analysis of past bridge and pavement inspection records, current analysis of bridges and pavements (field tests), lab tests, and development work in the area of corrosion testing. It will be important to get a base line reading and develop a methodology for testing. The time frame for this phase of research was decreased to 3 years. At the end of that time frame, the investigator will be asked to present a report to the board on the findings and suggest sites to be monitored for 5 - 10 years and present a budget to do so.

- ***Development of a Method to Determine Pavement Damage Due to Detours and Haul Roads***
  - After discussion, it was decided that the changes to this RFP would include that the representatives would be named by their respective associations; that it would request that a survey be done and the report include a summary of other methods of reimbursement used by other states; that it would be more generic in terms of recommended structural and functional evaluation of before and after, not to be limited to FWD technology; and that the time frame be shortened to 6 - 12 months.

- ***Synthesis of Best Practices of Increasing Protection and Visibility of Highway Maintenance Vehicles***
  - Steve Gent of the Office of Traffic and Safety in the DOT was recommended as a technical contact.

- ***Rehabilitation of Concrete Pavements Utilizing Rubblization and Crack and Seat Methods***
  - Clarification was made on the differences between previous projects dealing with crack and seat and rubblization versus the desired direction of this research. The focus on the previous research dealt more with the "how-to" process not so much with the thickness of the overlay to put down and what soil conditions would or would not be beneficial for this process (this current topic is more design focused).

  - The RFP will be adjusted to request an additional task of evaluating various past projects of different ages.

  - Mike Heitzman will be the technical contact.

- ***Determination of Effects of Anti-icing Brine on Highway Maintenance Equipment Deterioration***
  - This was the initial RFP sent out for review. After Mark Dunn spoke with Dennis Burkheimer, from the Office of Maintenance at the DOT, the following RFP was handed out (to replace this one) for consideration.

- ***Determination of the Effectiveness and Economics of Corrosion Reducing Chemicals for Use in Highway Deicing Operations***
  - Discussion on how the board wanted to approach this RFP concluded with the decision to break it into two separate solicitations.

  - The first focusing on the protection and life of the equipment (as a whole) including different types of substances to apply directly to equipment, use of parts that are galvanized or stainless steel, and use of a sacrificial anode. This would include an economic analysis of the cost of what is used versus the added life to the equipment. The desired outcome is to quantify the long-term economics of different options. The estimated time frame is 18 months.

  - The second focusing on what is added to the material that is being placed on the road and ways to treat the materials as it is being applied to decrease the corrosiveness of the salt. An example of this is the use of time-release salt so that one application lasts longer resulting in less material to go through the truck per winter storm event. Another example given was capsulation of the brine to avoid contact with the equipment, but to allow effectiveness with melting. Also mentioned was the use of inhibitors and how they react with the environment. The estimated time frame is 24 months.

- ***Mark Dunn will work on the final revisions of these RFPs and e-mail them for final approval within the next couple of weeks. They will then be sent out for solicitation.***

Final report, TR-408, "Investigation of Glass Fiber Composite Dowel Bars for Highway Pavement Slabs"

- Max Porter, Iowa State University, presented an overview of the project, project objectives, Phase I and II testing, Phase III scope and testing, conclusions, and recommendations of the research.

- Clarification was made that most all resin systems have been tested dealing with rebars and dowel bars at Iowa State University. For this project, the main resin system chosen for the tests was what the manufacturer was going to use with their product. On a couple of occasions, ISU had the manufacturer change the resin system for them. In the 50-year accelerated aging process, the vinylester resin performed well and only had a 12% - 17% decline. Isotomic polyester did not seem to perform well with this test. The resin is extremely important

- A question was raised about a paper by Larry Bank at the University of Wisconsin - Madison, in which he is presenting the elimination of the use of polyester resin and supporting the use of only epoxys and vinylesters. Dr. Porter said that the decline in strength that was shown in the tests on polyester resin point that direction.

- The products reviewed seem to be sensitive to the alkalinity; chloride did not seem to be the problem.

- There has not been a cost comparison done for these alternate dowel bars to include the material cost, shipping cost, construction cost, etc. The carbon fiber and glass dowels are more expensive on the material part (8 times and 3-4 times more, respectively) compared to the conventional steel rebar, however, shipping the steel rebar is more expensive. It would be difficult to quantify that at this point. Some manufacturers have commented that if they were to mass-produce the GRFP dowel, they would be very competitive with the epoxy coated steel dowel. The stage of mass-production has not been reached yet, so that is still uncertain.

- Clarification was made on the T-tests run at -40 degrees F. The dowel bars did well when 5000 cycles were run at -40. It was not a freeze-thaw test. Dr. Porter referred to some tests run by the Co-Regents Laboratory; there is speculation (however, not enough tests run currently) that if moisture hit the fibers, the freeze-thaw might have some effect. Using a good quality resin is the best defense against having moisture hitting the material.

- Wade Weiss moved to approve the report. Mark Nahra seconded. Carried with 11 yes, 0 no, and 0 abstaining. (Funding: $220,595 - 80% Primary, 10% Secondary, 10% Street)

Review of letter from State Senator Steve King concerning high-density polyethylene pipe

- Kevin Mahoney reported that he and Tom Cackler are planning to meet with Senator King. After meeting with him, Kevin Mahoney will pass the information back to the IHRB.

New Business

- An informal update was given by Wade Weiss and Roger Gould about the USGS report discussed at the last meeting. They have been in contact with David Eash with USGS, and will bring a conclusion to the board after further review. Kevin Mahoney discussed the issue of being required to use the new formulas on projects dealing with federal funds with Larry Jesse. Larry Jesse and others are planning on meeting with David Eash and getting information together to discuss the issue with the DNR. Again, these findings will be brought back to the board.

- The location of the next meeting will be the Large Materials Conference Room at the Iowa DOT, Ames Complex. The meeting will be held at 1:00 P.M., following the ICEA Annual Conference.

John Adam adjourned the meeting.

Date of Next Meeting:
THE NEXT MEETING WILL BE HELD THRUSDAY, DECEMBER 13, 2001 AT 1:00 P.M. IN THE LARGE MATERIALS CONFERENCE ROOM, AT THE IOWA DOT, CENTRAL COMPLEX, IN AMES, IOWA.

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Mark Dunn, IHRB Secretary